

In the Claims

Canceled Claims

Please cancel claims 2 through 6, without prejudice.

Amended Claims

1. (amended) A refrigeration process comprising the steps of:
compressing a lower temperature, lower pressure vapor refrigerant to a higher
temperature, and higher pressure vapor refrigerant,
condensing the higher temperature, higher pressure vapor refrigerant into a liquid
refrigerant at the higher pressure,
~~thermally-isolating the liquid pressure liquid;~~
evaporatively cooling the ~~thermally-isolated~~ liquid refrigerant ~~while the thermally-~~
~~isolated liquid refrigerant remains thermally-isolated~~ under adiabatic conditions to form a
cooled liquid refrigerant,
powering an engine with ~~the~~ a pressure difference between the ~~thermally-isolated~~
liquid refrigerant and the lower pressure vapor refrigerant, and
transferring a quantity of heat form a substance to the cooled liquid refrigerant to cool
the substance and convert the cooled liquid refrigerant into the lower temperature, lower
pressure vapor refrigerant ~~then allowing thermal contact of the remaining low temperature~~
~~and pressure liquid and the cooled substance causing the low temperature and pressure liquid~~
~~to further reversibly boil to a vapor at the low pressure.~~

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

1 7.(new) A refrigeration system comprising:

2 at least one compressor for compressing a lower pressure, lower temperature vapor
3 refrigerant into a higher pressure, higher temperature vapor refrigerant,

4 at least one condenser for condensing the higher pressure, higher temperature vapor
5 refrigerant into a liquid refrigerant at the higher pressure,

6 at least one cooling vessel adapted to cool the liquid refrigerant, under thermally
7 isolated, adiabatic conditions, to form a cooled liquid refrigerant having a lower temperature,

8 an engine adapted to be powered by a pressure difference between the liquid
9 refrigerant and the lower pressure, lower temperature vapor refrigerant, and

10 at least one evaporator adapted to bring the cooled liquid refrigerant and a substance
11 into thermal contact cooling the substance and forming the lower pressure, lower temperature
12 vapor refrigerant.

1 8.(new) The system of claim 7, wherein the cooling vessel includes a liner of low
2 thermal conductivity adapted to thermally isolate the liquid refrigerant so that the liquid
3 refrigerant is evaporatively cooled under adiabatic conditions.

1 9.(new) A refrigeration system comprising:

2 a compressor adapted to compress a lower pressure, lower temperature vapor
3 refrigerant into a higher pressure, higher temperature vapor refrigerant,

4 a condenser adapted to condense the higher pressure, higher temperature vapor
5 refrigerant into a liquid refrigerant at the higher pressure,

6 a cooling evaporator system adapted to cool the liquid refrigerant, under thermally
7 isolated, adiabatic conditions, to form a cooled liquid refrigerant at a lower temperature and
8 to bring the cooled liquid refrigerant into thermal contact with a substance cooling the
9 substance and forming the lower pressure, lower temperature refrigerant, and

10 an engine adapted to be powered by a pressure difference between the liquid
11 refrigerant and the lower pressure, lower temperature vapor refrigerant.

1 10.(new) The system of claim 9, wherein the cooling evaporator system includes cooling
2 vessel and an evaporator.

1 11.(new) The system of claim 10, wherein the cooling vessel includes a liner of low
2 thermal conductivity adapted to thermally isolate the liquid refrigerant so that the liquid
3 refrigerant is evaporatively cooled under adiabatic conditions.

1 12.(new) The system of claim 9, wherein the cooling evaporator system includes a liner
2 of low thermal conductivity adapted to thermally isolate the liquid refrigerant so that the
3 liquid refrigerant is evaporatively cooled under adiabatic conditions.